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TO: All Property Valuation Administrators

FROM: Thomas S. Crawford, Director
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Office of Property Valuation

DATE: August 1, 2014

SUBJECT: 2015-2018 Quadrennial Recommended Agricultural
Assessment Guidelines

These recommended guidelines are intended to create equitable and uniform agricultural assessments across the state. Section 172 of the Kentucky Constitution provides for a standard of assessment of all property not specifically exempted at its "Fair Cash Value". Section 172A provides for a standard of assessment in the same manner for the properties "Agricultural Value". The Supreme Court of Kentucky in its 1984 *Dolan v. Land* decision ruled that the assessment of property, whether at Fair Cash Value or Agricultural Value, must result in an equal tax burden for all. It is the Office of Property Valuation's position that compliance with this court decision is obtained by having the assessment based upon land class with a separate valuation of all buildings based on the individual characteristics of the structures.

In some instances, however, the PVA Offices may have information that could be more useful in assessing property in his or her individual county, which may necessitate a departure from these guidelines. Whatever method is used must result in a uniform standard of assessment.

The following Agricultural Assessment Guidelines were developed utilizing many different sources of information with some statistical application and recognized assessment methodology.

Accompanying this memorandum are the recommended agricultural value assessment guidelines that have been updated for the 2015 – 2018 Quadrennial physical review of all real property that will be completed by all Property Valuation Administrator (PVA) offices.

Commonwealth of Kentucky
Department of Revenue
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**Agricultural Assessment
Recommended Guidelines
2015-2018 Quadrennial Cycle**

Using 2004 - 2013 Data



Revised 07/18/2014
Kentucky Department of Revenue

Introduction

“Cash Rent” for farm land, i.e., cropland, pastureland, woodland, etc. has been selected as the basis for the development of the agricultural values for assessment purposes. Cash Rent was chosen because it is reflective of income producing capability and is derived from the market.

The use of cash rent as an indication of agricultural use value has several advantages. First, it represents an income stream to the landowner. The owner has accepted an agreeable (and market driven) rent in the form of a cash payment rather than assume the risk and costs involved in personally pursuing the production of crops or livestock. Second, cash rents depict gross income from investments in land that can be used to determine the use value of that land. Rents are related to farm land values in that they reflect the economic returns to the land, which yield estimates of value when capitalized.

Set forth below is a step-by-step explanation of how a cash rent per acre figure for each class of property in each of the six agricultural districts was developed. These six districts correspond to the agricultural statistical districts used by the United States Department of Agriculture for Kentucky. The actual per acre values for each district which are available for your use appear in Exhibit B. These values are ready for your use without further calculation. The following is a step-by-step explanation of how those figures were calculated.

Step 1

Classes of Land

The following classifications are used by the U.S. Government to identify farm lands (Exhibit A attached hereto sets forth a description of each of these classes and a description of the more traditional classifications used by many PVA Offices).

Class I	Cropped every year.
Class II	Cropped for 3 years; pastured for 1 year
Class III	Cropped for 2 years; pastured for 2 years
Class IV	Cropped for 1 year; pastured for 3 years
Class V	Permanent Pasture
Class VI	Pasture – Woodland (80% of Class V)
Class VII	Pasture – Mostly Woodland (60% of Class V)
Class VIII	Pasture – Mostly Woodland (40% of Class V)

Most counties have access to a system to break farms down into the recognized eight land classes per USDA-NRCS Soil Surveys. For those counties that do not have or are presently transferring their system to these classes, the following modified system is recognized;

Prime Crop	Classes I & II
Cropland	Classes III & IV
Pasture	Classes V & VI
Woodland	Classes VII & VIII

Step 2

Cash Rents by USDA District

The following table represents the average unadjusted cash rent values for each of the six agricultural statistical districts ("ASD") based on averaged 2004 through 2013 data from each county within the district:

ASD	Cropland	Pastureland
1 – Purchase	\$ 90.73	\$ 33.00
2 – Midwest	\$ 112.73	\$ 31.53
3 – Central	\$ 73.96	\$ 27.79
4 – Northern	\$ 68.17	\$ 23.50
5 – Bluegrass	\$ 66.13	\$ 27.22
6 – Eastern	\$ 56.80	\$ 26.20
Statewide	\$ 73.26	\$ 27.73

Step 3

Adjustment to Per Acre Rental Amount for Improvements

The USDA has calculated that approximately 20% of total farm value is comprised of improvements. In order to compensate for the value of any farm improvements included in the cash rent figures, the average rental values shown in Step 2 must be reduced by 20%. Using only the statewide averages as an example, the adjusted amount for cropland would be:

$$\$73.26 \times 80\% (.80) = \$58.61$$

The statewide average for pastureland would be:

$$\$27.73 \times 80\% (.80) = \$22.18$$

All farm improvements will then be valued separately and added to the total land value for a final determination of the overall agricultural value.

Step 4

Application of Per Acre Rents to Each Property Class

Using the property classifications shown in Step 1 the per acre rents for cropland and pastureland values need to be allocated to the various classes of property. Using the adjusted statewide averages of \$58.61 for cropland and \$22.18 for pastureland, the following is an example of the calculations that must be done.

Class I	\$ 58.61 per acre rent	=	\$ 58.61 per acre
Class II	(\$58.61 + \$58.61 + \$58.61 + \$22.18)/4 years	=	\$ per acre
Class III	(\$58.61 + \$58.61 + \$22.18 + \$22.18)/4 years	=	\$ 50.50 per acre
Class IV	(\$58.61 + \$22.18 + \$22.18 + \$22.18)/4 years	=	\$ 39.11 per acre
Class V	\$ 22.18 per acre rent	=	\$ 22.18 per acre
Class VI	(80% of Class V)	=	\$ 22.18 per acre
Class VII	(60% of Class V)	=	\$ 16.64 per acre
Class VIII	(40% of Class V)	=	\$ 11.09 per acre

Step 5

Capitalization of Cash Rents

Capitalization is the process of translating or converting an income stream into an indication of the present value of a property

The capitalization rate is an expression of interest, usually in terms of an annual percentage. The capitalization rate must be based upon the money market, physical and economic risks, marketability, and the attractiveness of other forms of investment, i.e., the current financial market information.

The capitalization rate must represent what sellers, buyers, and investors require in terms of an overall rate in order to attract the capital required to transfer farm ownership.

The formula for developing the capitalization rate for use in assessing farm land in Kentucky is the "mortgage-equity" method. This is composed of the actual cost of money to a farm purchaser together with the purchaser's equity investment.

The first component in the formula is a ten year average of mortgage interest rates as obtained from Farm Credit Services and IRS Internal Revenue Bulletins: 10-year average – 6.15% (2004-2013)

Since the first mortgage is typically 70% of the price of the farm property the 10-year average interest rate must be multiplied by 0.70 to arrive at the weighted factor that represents the first mortgage. ($0.70 \times 0.0615 = 0.04305$) This factor is 4.305%

The second component in the formula is the return on investor's equity that has been developed from farm income divided by actual farm sales. This return is actually fairly low, roughly 3% to 4% on the properties examined. This percentage is combined with the first mortgage interest rate to create the actual annual cost of the investment in the farm. If the owner cannot pay the interest and obtain some return on his equity in the property he will probably fail. This factor is developed as follows:

$$6.15\% + 4\% = 10.15\%$$

The factor of 10.15% is then multiplied by the equity portion of the investment, 30%, to arrive at the equity component of the capitalization rate:

$$0.30 \times 0.1015 = 0.03045 \text{ or } 3.045\%$$

The total of these two components represent the money cost to the purchaser. To this is added the statewide effective property tax rate, 1%, to complete the formula. The effective tax rate represents the annual tax liability of the property and must be considered just as is the real cost of money to the purchaser.

These three components then comprise the capitalization rate used to compute property values:

Mortgage Component	4.305%
Equity Component	3.045%
Effective Tax Rate	1.00%

Total Rate	8.35%

The adjusted rent per acre is divided by the 8.35% capitalization rate to produce agricultural value, per acre, per land classification, per agricultural statistical district.

Examples **Statewide Average Cropland (Adjusted)**
\$ 58.61 divided by 0.0835 = \$ 701.92

Statewide Average Pastureland (Adjusted)
\$ 22.18 divided by 0.0835 = \$ 265.63

ACTUAL RECOMMENDED PER ACRE VALUES TO BE USED

The actual adjusted per acre values for each class in each of the six districts appears in Exhibit B. We have also provided you with the actual survey figures for each county within the districts in Exhibit C. If you would prefer to use your county specific data rather than the general district data, please contact your Field Representative for further assistance with the computation.

Exhibit A

LAND CAPABILITY CLASSES

Class I

These soils are suited to a wide variety of plants and may be used safely for cultivated crops, pasture, range, woodland, and wildlife. The soils are nearly level and erosion hazard (wind and water) is low. These soils are deep, generally well-drained, and easily worked. They hold water well and are either fairly well supplied with plant nutrients or highly responsive to inputs of fertilizer. Row crops and small grains can be grown on these soils year after year under high level management. This class represents level land.

Class II

These soils require careful soil management, including conservation practices, to prevent deterioration or to improve air and water relations when cultivated. The limitations are few and the practices are easy to apply. The soils may be used for cultivated crops, pasture, range, woodland, or wildlife food and cover. Various combinations of cropping systems and conservation practices may be used. Most recommendations include a rotation of 2 years of row crops followed by 1 year of hay and pasture. This class represents land having a slope of up to 6%

Class III

These soils have more restrictions than those in Class II and when used for cultivated crops the conservation practices are usually more difficult to apply and maintain. They may be used for cultivated crops, pasture, woodland, range, or wildlife food and cover. Again various combinations of cropping and conservation practices may be used. These range from 2 years of row crops and 1 year of hay and pasture and 1 year of row crops followed by 2 years of hay or pasture. A recommended rotation consists of 2 years of row crops followed by 2 years of hay and pasture. This class represents land having a slope up to 14%

Class IV

The restrictions in use for soils in this class are greater than those in Class III and the choice of plants is more limited. When cultivated, more careful management is required and conservation practices are more difficult to apply and maintain. These soils may be used for crops, pasture, woodland, range, or wildlife food and cover. This class has some severe limitations that restrict the choice of plants and require very careful management. A recommended rotation consists of 1 year of row crops followed by 3 years of hay and pasture. This class represents land having a slope up to 20%.

Class V

These soils have limitations that restrict the kind of plants that can be grown and that prevent normal tillage of cultivated crops. They are nearly level but some are wet, frequently overflowed by streams, are stony, and have climatic limitations, or have some combination of these limitations. This class has few

erosion problems but is subject to frequent and severe flooding. This class should be kept in hay and pasture continuously.

Class VI

Physical conditions of soils placed in this class are such that it is practical to apply range and pasture improvements, if needed, such as seeding, liming, fertilizing, and water control with contour furrows, drainage ditches, diversions, or water spreaders. This class has severe limitations that make it generally unsuitable for cultivation. Land in this class should be limited to pasture, woodland, or wildlife food and cover. No row crops can be grown on this class. This class represents land having a slope up to 40%.

Class VII

Physical conditions of soils in this class are such that it is impractical to apply such pasture or range improvements as seeding, liming, fertilizing, and water control with contour furrows, ditches, diversions, or water spreaders. This class is unsuitable for cultivation and should be used only for pasture, woodland, or wildlife food and cover. A ground cover adequate for erosion control is necessary. This class represents land having a slope of up to 80%.

Class VIII

Soils and land forms in this class cannot be expected to return significant on-site benefits from management of crops, grasses, or trees, although benefits from wildlife use, watershed protection, or recreation may be possible. This class has severe limitations that prevent use for commercial production of plants and restricts the use to recreation, wildlife, water supply or esthetic purposes.

Prime Cropland

This soil group is suitable for a wide variety of crops, pasture, range, woodland, and wildlife. These soils will be nearly level with minimal erosion hazards. These soils will also be deep, well-drained and easily workable and row crops and grains can be grown year after year. This soil group corresponds closely to Class I and some Class II soil in the USDA soil survey method.

Cropland

These soils may be used for cultivated crops, pasture, range, woodland or wildlife and they require careful soil conservation practices to maintain their productivity. Various combinations or crop systems may be employed with rotation of the various crops and pasture schemes followed. These soils relate to Class II, III, and IV in the USDA soil survey method.

Pasture

These soils have some limitations as to the capability to produce crops and as such are suitable for continuous use for hay and pasture land. A good ground cover is generally always needed on these soils for adequate erosion protection. These soils usually have steep slopes.

Woodland

These soils have few expectations for significant crop, grasses, or other uses beyond natural tree growth, wildlife use, watershed protection or possible recreation.

Exhibit – B – ASD District #1

COUNTY	2014	2014
	<u>Adj</u>	<u>Adj</u>
ASD District #1	<u>Cropland</u>	<u>Pasture</u>
	<u>Rents</u>	<u>Rents</u>
BALLARD	\$84	\$38
CALLOWAY	\$93	\$24
CARLISLE	\$92	\$33
FULTON	\$101	\$32
GRAVES	\$96	\$40
HICKMAN	\$107	\$43
LIVINGSTON	\$77	\$22
LYON	\$79	\$24
McCRACKEN	\$83	\$41
MARSHALL	\$72	\$31
TRIGG	\$114	\$35
Mean Value	\$90.73	\$33.00
Std. Dev.	\$13.15	\$7.28
C.O.V.	14.49%	22.06%
Samples	#11	#11

Exhibit – B – ASD District #2

COUNTY	2014 <i>Adj.</i> <i>Cropland</i>	2014 <i>Adj.</i> <i>Pasture</i>
ASD District #2	<i>Rents</i>	<i>Rents</i>
CALDWELL	\$94	\$27
CHRISTIAN	\$125	\$43
CRITTENDEN	\$80	\$21
DAVISS	\$108	\$28
HANCOCK	\$93	\$37
HENDERSON	\$129	\$36
HOPKINS	\$104	\$19
LOGAN	\$140	\$36
McLEAN	\$108	\$32
MUHLENBERG	\$79	\$24
OHIO	\$93	\$25
SIMPSON	\$121	\$30
TODD	\$136	\$43
UNION	\$155	\$43
WEBSTER	\$126	\$29
Mean Value	\$112.73	\$31.53
Std Dev.	\$22.66	\$7.90
C.O.V.	20.10%	25.05%
Samples	#15	#15

Exhibit – B – ASD District #3

COUNTY	2014 <i>Adj.</i> <i>Cropland</i>	2014 <i>Adj.</i> <i>Pasture</i>
ASD District #3	<i>Rents</i>	<i>Rents</i>
ADAIR	\$64	\$27
ALLEN	\$66	\$26
BARREN	\$91	\$29
BRECKINRIDGE	\$80	\$27
BULLITT	\$59	\$21
BUTLER	\$87	\$25
CASEY	\$62	\$23
CLINTON	\$56	\$27
CUMBERLAND	\$48	\$21
EDMONSON	\$72	\$28
GRAYSON	\$57	\$23
GREEN	\$77	\$31
HARDIN	\$83	\$30
HART	\$63	\$26
JEFFERSON	\$73	\$30
LARUE	\$102	\$39
MARION	\$80	\$31
MEADE	\$90	\$32
METCALFE	\$56	\$26
MONROE	\$63	\$25
NELSON	\$84	\$28
RUSSELL	\$53	\$30
TAYLOR	\$104	\$33
WARREN	\$105	\$29
Mean Value	\$73.96	\$27.79
Std. Dev.	\$16.75	\$4.03
C.O.V.	22.65%	14.51%
Samples	#24	#24

Exhibit – B – ASD District #4

COUNTY	2014 <i>Adj.</i> <i>Cropland</i>	2014 <i>Adj.</i> <i>Pasture</i>
ASD District #4	<i>Rents</i>	<i>Rents</i>
BOONE	\$62	\$24
BRACKEN	\$75	\$27
CAMPBELL	\$61	\$21
CARROLL	\$55	\$17
GALLATIN	\$81	\$16
GRANT	\$52	\$17
HENRY	\$83	\$27
KENTON	\$60	\$18
OLDHAM	\$64	\$32
OWEN	\$61	\$27
PENDLETON	\$82	\$27
TRIMBLE	\$82	\$29
Mean Value	\$68.17	\$23.50
Std. Dev.	\$11.57	\$5.47
C.O.V.	16.98%	23.27%
Samples	#12	#12

Exhibit – B – ASD District #5

COUNTY	2014 <i>Adj.</i> <i>Cropland</i> <i>Rents</i>	2014 <i>Adj.</i> <i>Pasture</i> <i>Rents</i>
ASD District #5		
ANDERSON	\$55	\$24
BATH	\$66	\$25
BOURBON	\$56	\$32
BOYLE	\$48	\$34
CLARK	\$66	\$28
FAYETTE	\$69	\$32
FLEMING	\$62	\$27
FRANKLIN	\$65	\$25
GARRARD	\$61	\$28
HARRISON	\$67	\$26
JESSAMINE	\$67	\$23
LINCOLN	\$60	\$32
MADISON	\$34	\$21
MASON	\$73	\$29
MERCER	\$79	\$29
MONTGOMERY	\$52	\$25
NICHOLAS	\$74	\$23
ROBERTSON	\$63	\$18
SCOTT	\$57	\$21
SHELBY	\$86	\$34
SPENCER	\$90	\$33
WASHINGTON	\$77	\$31
WOODFORD	\$94	\$26
Mean Value	\$66.13	\$27.22
Std. Dev.	\$13.66	\$4.48
C.O.V.	20.66%	16.47%
Samples	#23	#23

Exhibit – B – ASD District #6

COUNTY	2014	2014
	<u>Adj.</u>	<u>Adj.</u>
	<u>Cropland</u>	<u>Pasture</u>
ASD District #6	<u>Rents</u>	<u>Rents</u>
BELL	\$60	\$28
BOYD	\$45	\$21
BREATHITT	\$63	\$27
CARTER	\$57	\$29
CLAY	\$53	\$27
ELLIOTT	\$62	\$25
ESTILL	\$56	\$26
FLOYD	\$61	\$31
GREENUP	\$49	\$21
HARLAN	\$51	\$39
JACKSON	\$54	\$22
JOHNSON	\$53	\$23
KNOTT	\$90	\$39
KNOX	\$35	\$19
LAUREL	\$41	\$17
LAWRENCE	\$47	\$26
LEE	\$38	\$12
LESLIE	\$69	\$42
LETCHER	\$50	\$28
LEWIS	\$52	\$27
McCREARY	\$63	\$25
MAGOFFIN	\$56	\$17
MARTIN	\$64	\$31
MENIFEE	\$74	\$22
MORGAN	\$45	\$22
OWSLEY	\$48	\$21
PERRY	\$51	\$25
PIKE	\$61	\$36
POWELL	\$71	\$34
PULASKI	\$58	\$30
ROCKCASTLE	\$48	\$25
ROWAN	\$64	\$22
WAYNE	\$95	\$32
WHITLEY	\$44	\$22
WOLFE	\$60	\$24
Mean Value	\$56.80	\$26.20
Std. Dev.	\$12.70	\$6.55
C.O.V.	22.35%	24.99%
Samples	#35	#35

Exhibit – C – Statewide Model

Agricultural Value Calculations Form

Statewide 2015-2018

	10-Yr Avg.		Adjusted
Typical Cropland Rent Per Acre	\$73.26	Less Bldg.	\$58.61
Typical Pasure Rent Per Acre	\$27.73	Less Bldg.	\$22.18

Rental Pro-Rata

	Crop Base	Past Base	Cropping Pattern	Adjusted	Cap Rate	Ag. Value
Class I	\$58.61		Crop Every Year	\$58.61	0.0835	\$701.66
Class II	\$58.61	\$22.18	Crop 3 / Pasture 1	\$49.50	0.0835	\$592.64
Class III	\$58.61	\$22.18	Crop 2 / Pasture 2	\$40.40	0.0835	\$483.62
Class IV	\$58.61	\$22.18	Crop 1 / Pasture 3	\$31.29	0.0835	\$374.60
Class V		\$22.18	Pasture Every Year	\$22.18	0.0835	\$265.59
Class VI			Pro-Rata 80% (V)	\$17.75	0.0835	\$212.47
Class VII			Pro-Rata 60% (V)	\$13.31	0.0835	\$159.35
Class VIII			Pro-Rata 40% (V)	\$8.87	0.0835	\$106.24

	Crop Base	Past Base	Cropping Pattern	Adjusted	Cap Rate	Ag. Value
Prime Crop	\$58.61		Classes I & II	\$54.06	0.0835	\$647.15
Cropland	\$58.61	\$22.18	Classes III & IV	\$35.84	0.0835	\$429.11
Pasture		\$22.18	Classes V & VI	\$19.97	0.0835	\$239.03
Woodland		\$22.18	Classes VII & VIII	\$11.09	0.0835	\$132.79

Mortgage Rates

2004	6.93%	2009	6.50%
2005	6.44%	2010	6.41%
2006	6.02%	2011	6.12%
2007	6.10%	2012	5.61%
2008	6.38%	2013	5.03%

10-Year Average of Mortgage Rates

20 Year Fixed 70%/30% Loans

Source: IRS Internal Revenue Bulletin

Average 6.15%

Rate Calculations

Mortgage Position	70%	x	6.15%	Equals	4.305%
Mortgage Position	30%	x	10.15%	Equals	3.045%
		Add	Indicated Land Rate		7.35%
			Effective Tax Rate		1.00%
			Indicated Cap Rate		8.35%

Exhibit – C – ASD District #5

Agricultural Value Calculations Form

ASD District #5

2015-2018

	10 Yr Avg		Adjusted
Typical Cropland Rent Per Acre	\$66.13	Less Bldg.	\$52.90
Typical Pasture Rent Per Acre	\$27.22	Less Bldg.	\$21.78

Rental Pro-Rata

	Crop Base	Past Base	Cropping Pattern	Adjusted	Cap Rate	Ag. Value
Class I	\$52.90		Crop Every Year	\$52.90	0.0835	\$633.28
Class II	\$52.90	\$21.78	Crop 3 / Pasture 1	\$45.12	0.0835	\$540.12
Class III	\$52.90	\$21.78	Crop 2 / Pasture 2	\$37.34	0.0835	\$446.97
Class IV	\$52.90	\$21.78	Crop 1 / Pasture 3	\$29.56	0.0835	\$353.82
Class V		\$21.78	Pasture Every Year	\$21.78	0.0835	\$260.67
Class VI			Pro-Rata 80% (V)	\$17.42	0.0835	\$208.53
Class VII			Pro-Rata 60% (V)	\$13.07	0.0835	\$156.40
Class VIII			Pro-Rata 40% (V)	\$8.71	0.0835	\$104.27

	Crop Base	Past Base	Cropping Pattern	Adjusted	Cap Rate	Ag. Value
Prime Crop	\$52.90		Classes I & II	\$49.01	0.0835	\$586.70
Cropland	\$52.90	\$21.78	Classes III & IV	\$33.45	0.0835	\$400.40
Pasture		\$21.78	Classes V & VI	\$19.60	0.0835	\$234.60
Woodland		\$21.78	Classes VII & VIII	\$10.89	0.0835	\$130.33

Mortgage Rates

2004	6.93%	2009	6.50%
2005	6.44%	2010	6.41%
2006	6.02%	2011	6.12%
2007	6.10%	2012	5.61%
2008	6.38%	2013	5.03%

10-Year Average of Mortgage Rates

20 Year Fixed 70%/30% Loans

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Mortgage Position	70%	x	6.15%	Equals	4.305%
Mortgage Position	30%	x	10.15%	Equals	3.045%
		Add	Indicated Land Rate		7.35%
			Effective Tax Rate		1.00%
			Indicated Cap Rate		8.35%

